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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Peter Zuk JR.

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10/07/2003

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EXAMINER

OCAMPO, MARIANNE S

ART UNIT

PAPER NUMBER

1723

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2

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,856

Applicant(s)

ZUK, PETER

Examiner

Marianne S. Ocampo

Art Unit

1723

-- **Th MAILING DATE of this communication appears on the cov r sh t with the correspond nc addr ss --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 – 2, 22 and 49 - 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Krueger (US 3,295,686).

3. With regards to claim 1, Krueger discloses a vacuum filtration apparatus comprising:

- a base (72) containing a funnel well (defined by wall 72a and ledge 76 with the horizontal surface/well 63), the funnel well having (with) the following:

- a filter seal surface (76) disposed adjacent to the bottom of the inside wall of the funnel well,
- a filter support means (66, 68) disposed in the bottom of the funnel well inside the filter seal surface,
- an outlet port (64) disposed below said filter support means (66, 68), the outlet port being in fluid flow communication with said filter support means,

- a funnel (56 or 5) with an open top, and a bottom outside portion of the funnel releasably attached with an interference fit to the inside wall (inside surface of wall 72a) of the funnel well, the funnel containing an integral flexible filter seal (56a or 13) disposed around the bottom of the funnel and which provides a leak tight releasable seal between the filter seal surface for varying thickness of a filter means.

- a filter means (29 or 59) disposed in the bottom portion of the funnel well with the downstream surface of the filter means lying in the same plane as the filter seal surface, the filter means releasably sealed between the filter seal surface and the integral flexible seal, as in figs. 1 & 4 – 6 and cols. 1 – 4.

4. Regarding claim 2, Krueger also discloses a releasable attachment between the funnel (5 or 56) and the base (15 or 72) is an interference fit between one or more integral flexible funnel seal rings (such as 13) protruding from the bottom outer periphery of said funnel, and the inside wall (15 or 72a) of said funnel well of said base, as in figs. 1 & 4.

5. Concerning claim 22, Krueger discloses a vacuum filtration apparatus comprising:

- a base (72) containing a funnel well (defined by wall 72a and ledge 76 with the horizontal surface/well 63), the funnel well having (with) the following:
 - a filter seal surface (76) disposed adjacent to the bottom of the inside wall of the funnel well,

- a filter support means (66, 68) disposed in the bottom of the funnel well inside the filter seal surface,
- an outlet port (64) disposed below said filter support means (66, 68), the outlet port being in fluid flow communication with said filter support means,
- a funnel (56 or 5) with an open top, and a bottom outside portion of the funnel releasably attached with an interference fit to the inside wall (inside surface of wall 72a) of the funnel well, the releasable attachment between the funnel and the base is an interference fit between an outer edge of one or more integral flexible funnel seal rings (13) protruding from the bottom outer periphery of the funnel (5), and the inside wall of said funnel well of said base,
- a filter means (29 or 59) disposed in the bottom portion of the funnel well with the downstream surface of the filter means lying in the same plane as the filter seal surface, the filter means releasably sealed between the filter seal surface and the bottom surface of the funnel, whereby the one or more integral flexible funnel seal rings (13) provide the releasable attachment between the funnel and the base, as in figs. 1 & 4 – 6 and cols. 1 – 4.

6. With respect to claim 49, Krueger discloses a vacuum filtration apparatus comprising:

- a base (72) containing a funnel well (defined by wall 72a and ledge 76 with the horizontal surface/well 63), the funnel well having (with) the following:
 - a filter seal surface (76) disposed adjacent to the bottom of the inside wall of the funnel well,

- a filter support means (66, 68) disposed in the bottom of the funnel well inside the filter seal surface,
- an outlet port (64) disposed below said filter support means (66, 68), the outlet port being in fluid flow communication with said filter support means,
- a funnel (56 or 5) with an open top, and a bottom outside portion of the funnel releasably attached to the inside wall (inside surface of wall 72a) of the funnel well,
- a filter seal ring (defined by the annular lip 31 formed integrally with the funnel 5) press fitted into the funnel well of the base with an interference fit between the end surface of said filter seal ring and the inside wall of the funnel well,
- a filter means (59) disposed in the bottom portion of the funnel well with the downstream surface of said filter means lying in the same plane as the filter seal surface, the filter means sealed with a compression seal between the filter seal surface of the filter seal ring (13) and the filter seal surface of the base, as in figs. 1 & 4 – 6 and cols. 1 – 4.

7. Regarding claim 50, Krueger further discloses the releasable attachment between the funnel (56) and the base (72) is an interference fit between the outer wall of the funnel, and the inside wall of the funnel well (defined by walls 72a and bottom wall 63) of the base (72), as in figs. 4 – 6.

8. With respect to claim 51, Krueger also discloses the releasable attachment between the funnel and the base is an interference fit between one or more integral flexible funnel seal rings

(at least one ring 13 formed integrally with the outer wall surface of the funnel 56) protruding from the bottom outer periphery of the funnel and inside wall of the funnel well, whereby the one or more integral flexible funnel seal rings (13) provide a releasable attachment between the funnel and the base, as in fig. 1.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains: Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3 – 5, 12 – 14, 23 – 25, 36 and 52 – 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger in view of Jones, Jr. et al. (US 5,849,249).

11. With regards to claims 3, 12, 23 and 52, Krueger has disclosed the limitations of the base claims 1, 22 and 49 above. Krueger fails to disclose a top surface of the filter support means being disposed below the filter seal surface, thereby creating a pad well below the filter seal surface.

Jones, Jr. et al. teach a similar vacuum filtration apparatus to that of Krueger, the apparatus of Jones, Jr. et al. including a filter support means having a top surface (42) disposed

below a filter seal surface (the filter seal surface being at the top of flange/shoulder 48 of the disk holder 40), thereby creating a pad well (for sitting an adsorbent pad 30 therein) below the filter seal surface, as in figs. 4a and 6 and cols. 3 – 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter support means of the apparatus of Krueger, by adding the embodiment taught by Jones, Jr. et al., in order to provide an improved vacuum filtration apparatus having an improved filter support means which allows the insertion/addition of an adsorbent pad/disk, thereby providing a more effective filtration apparatus capable not only of removing certain sized contaminants/undesirable constituents from a fluid but has an additional adsorbent means for absorbing unwanted constituents not removed by a filter element. Furthermore, the design of the filter support means of Jones, Jr. et al. provides a multitude of various funnels to be combined with various bases while at the same time provide an active area of the filter element/adsorbent pad be in a direct flow path of the fluid during use, see cols. 3 – 4 of Jones, Jr. et al.

12. With respect to claims 4, 13, 24 and 53, Krueger, as modified by Jones, Jr. et al., has disclosed the limitations of the base claims 3, 14, 23 and 52 above. Krueger, as modified by further teach an adsorbent pad (30) is disposed in the pad well, with the downstream surface of the adsorbent pad resting on the top surface (42) of the filter support means, and with a portion of the downstream surface of a filter means (layer 31) resting on the upstream surface of the adsorbent pad (30), as in figs. 3a & 4a. It is considered obvious to one of ordinary skill in the

art at the time of the invention to modify the filter support means of the apparatus of Krueger, as modified by Jones Jr. et al, by further adding the embodiment taught by Jones, Jr. et al., in order to provide an improved vacuum filtration apparatus having an additional filter means in the form of an adsorbent pad/disk, thereby providing a more effective filtration apparatus capable not only of removing certain sized contaminants/undesirable constituents from a fluid but has an additional adsorbent means for absorbing unwanted constituents not removed by a filter element.

13. Regarding claims 5, 14, 25 and 54, Krueger, as modified by Jones, Jr. et al., has disclosed the limitations of the base claims 4, 13, 24 and 53 above. Krueger, as modified by further teach thickness of the absorbent pad (30) being substantially greater than the height of the pad well, as in fig. 4a. The thickness of the pad is considered a result effective variable, which can be optimized depending upon the desired amount of unwanted constituents to absorb. The thicker the pad, the more dirt holding or fluid absorbing capacity it can have.

14. Concerning claim 36, Krueger discloses a vacuum filtration apparatus comprising:

- a base (72) containing a funnel well (defined by wall 72a and ledge 76 with the horizontal surface/well 63), the funnel well having (with) the following:
 - a filter seal surface (76) disposed adjacent to the bottom of the inside wall of the funnel well,
 - a filter support means (66, 68) disposed in the bottom of the funnel well inside the filter seal surface,

- an outlet port (64) disposed below said filter support means (66, 68), the outlet port being in fluid flow communication with said filter support means,
- a funnel (56 or 5) with an open top, and a bottom outside portion of the funnel releasably attached with an interference fit to the inside wall (inside surface of wall 72a) of the funnel well, the funnel containing an integral flexible filter seal (56a or 13) disposed around the bottom of the funnel and which provides a leak tight releasable seal between the filter seal surface for varying thickness of a filter means and,
- a filter means (29 or 59) disposed in the bottom portion of the funnel well with the downstream surface of the filter means lying in the same plane as the filter seal surface, the filter means releasably sealed between the filter seal surface and the integral flexible seal, as in figs. 1 & 4 – 6 and cols. 1 – 4.

Krueger fails to disclose a top surface of the filter support means being disposed below the filter seal surface to create a pad well below the filter seal surface and an absorbent pad disposed in the pad well with the downstream surface of the pad resting on the top surface of the filter support means and with a portion of the downstream surface of the filter means resting on an upstream surface of the absorbent pad and the thickness of the pad being substantially greater than the height of the pad well.

15. Jones, Jr. et al. teach a similar vacuum filtration apparatus to that of Krueger, the apparatus of Jones, Jr. et al. including a filter support means having a top surface (42) disposed below a filter seal surface (the filter seal surface being at the top of flange/shoulder 48 of the disk

holder 40), thereby creating a pad well (for sitting an adsorbent pad 30 therein) below the filter seal surface, and an adsorbent pad (30) disposed in the pad well with the downstream surface of the pad resting on the top surface (42) of the filter support means and with a portion of the downstream surface of the filter means (top membrane layer 31) resting on an upstream surface of the adsorbent pad (30) and the thickness of the pad (30) being substantially greater than the height of the pad well, as in figs. 4a and 6 and cols. 3 – 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger, by adding the embodiments taught by Jones, Jr. et al., in order to provide an improved vacuum filtration apparatus having an improved filter support means and an additional filtering means in the form of an adsorbent pad/disk, thereby providing a more effective filtration apparatus capable not only of removing certain size contaminants/undesirable constituents from a fluid but has an additional adsorbent means for absorbing unwanted constituents not removed by a filter element/membrane layer. Furthermore, the design of the filter support means of Jones, Jr. et al. provides a multitude of various funnels to be combined with various bases while at the same time provide an active area of the filter element/adsorbent pad be in a direct flow path of the fluid during use, see cols. 3 – 4 of Jones, Jr. et al.

16. Regarding claim 55, Krueger discloses a vacuum filtration apparatus comprising:

- a base (72) containing a funnel well (defined by wall 72a and ledge 76 with the horizontal well/surface 63), the funnel well having (with) :

- a filter seal surface disposed adjacent to the bottom of the inside wall of the funnel well,
- a filter support means (66, 68) disposed in the bottom of the funnel well inside of the filter seal surface, with the filter support means containing a seal surface at its outer periphery,
- an outlet port (64) disposed below the filter support means, in fluid flow communication with the filter support means,
- a funnel (5 or 56) with an open top, with the bottom outside portion (13) thereof releasably attached to the inside wall of the funnel well of said base, and
- a filter means disposed in the bottom portion of the funnel well with the downstream surface of the filter means lying in the same plane as the filter seal surface, the filter means releasably sealed between the filter seal surface of said base and the bottom surface of the funnel, as in figs 1 & 4 – 6 and cols. 1 - 4.

Krueger fails to disclose a top surface of the filter support means disposed below the filter seal surface, thereby creating a pad well below the filter seal surface, and a lower filter means disposed in the bottom of the pad well, an absorbent pad disposed in the pad well above the lower filter means, with the downstream surface of the absorbent pad resting on the upstream surface of the lower filter means, with the outer periphery of the lower filter means sealed between the seal surface of the filter support means and the outer periphery of the downstream surface of the absorbent pad.

17. Jones, Jr. et al. teach a vacuum filtration apparatus similar to that of Krueger, comprising a base (11) and a funnel (10) and a filter support means (40, 48, 42), wherein a top surface (42) of the filter support means disposed below the filter seal surface (48), thereby creating a pad well below the filter seal surface (48), and a lower filter means (in the form of lower filter layer 32) disposed in the bottom of the pad well, an absorbent pad (30) disposed in the pad well above the lower filter means (32), with the downstream surface of the absorbent pad resting on the upstream surface of the lower filter means, with the outer periphery of the lower filter means sealed between the seal surface of the filter support means and the outer periphery of the downstream surface of the absorbent pad, as in figs. 3A, 4A and 8 and cols. 3 – 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger, by adding the embodiments taught by Jones, Jr. et al., in order to provide an improved vacuum filtration apparatus having an improved filter support means and an additional filtering means in the form of an adsorbent pad/disk, thereby providing a more effective filtration apparatus capable not only of removing certain size contaminants/undesirable constituents from a fluid but has an additional adsorbent means for absorbing unwanted constituents not removed by a filter element/membrane layer. Furthermore, the design of the filter support means of Jones, Jr. et al. provides a multitude of various funnels to be combined with various bases while at the same time provide an active area of the filter element/adsorbent pad be in a direct flow path of the fluid during use, see cols. 3 – 4 of Jones, Jr. et al.

18. With regards to claim 56, Krueger, as modified by Jones, Jr. et al., has disclosed the limitations of claim 54 above. Krueger further discloses the releasable attachment between the funnel (5 or 56) and the base (72) being an interference fit between an outer wall of the funnel and the inside wall of the funnel well (72a, 63), as in fig. 4.

19. Concerning claim 57, Krueger, as modified by Jones, Jr. et al., has disclosed the limitations of claim 54 above. Krueger also discloses the filter seal surface of the base (72) comprising/containing a groove (76) in at least a portion of its outer (open top) periphery, as in figs. 4 & 6.

20. Claims 6 – 8 and 26 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger in view of Mehra et al. (US 4,357,240).

21. With respect to claims 6 - 7 and 26 - 27, Krueger has disclosed the limitations of claims 1 and 22, respectively above. Krueger fails to disclose a portion of the filter means that is in contact with the filter seal surface, is sealed to the filter seal surface with an ultrasonic seal (claim 7) or a heat seal (claim 6), the seal forming a closed loop.

Mehra et al. teach a vacuum filtration apparatus similar to Krueger having a filter means (56) with a portion thereof in contact with a filter seal surface (in the vicinity of the filter seat 54) and sealed to the seal surface with an ultrasonic seal or heat seal, as in col. 3, lines 18 – 25 and fig. 1.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger by adding the embodiments taught by Mehra et al., in order to provide an improved seal between the filter and the filter support means or funnel well, thereby preventing leakage of unfiltered fluid and unwanted mixture of unfiltered fluid with filtered fluid, as well as provide a means for fixing the filter in position for preventing leakage of unfiltered fluid and unwanted mixture of unfiltered fluid with filtered fluid.

22. With respect to claims 8 and 28, Krueger has disclosed the limitations of claims 1 and 22, respectively above. Claims 8 and 28 add the limitation of using a solvent seal (instead of an ultrasonic seal or heat seal as in claims 6 – 7 and 26 – 27 above) to seal the filter means to the filter seal surface. Mehra et al. teach using ultrasonic seal or a heat seal for sealing the filter means to a filter seal surface, as in col. 3. Although Krueger as modified by Mehra et al., do not teach using a solvent seal to seal the filter means to the filter seal surface, it is well known in the art that solvent seal/sealing is considered an obvious variation of the type of seal (i.e. ultrasonic or heat seals/sealing) used to seal the filter element as taught by Mehra et al. The use of a solvent seal instead of an ultrasonic seal or heat seal, does not require any energy costs for heating or providing ultrasonic equipment which can be more expensive than providing adhesive solvents.

23. Claims 9 – 10 and 29 - 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger in view of Sklar et al. (US 5,308,483).

24. With regards to claims 9 and 29, Krueger has disclosed the limitations of claims 1 and 22, respectively above. Krueger fails to disclose the base having (contains) one or more lid clamp tabs protruding from an outside wall of the base, with the bottom edge of each lid clamp tab being equidistant from the top outer wall of the base.

25. Sklar et al. teach a vacuum filtration apparatus similar to that of Krueger, having a funnel (10) removably attached to a base with a funnel well (30) and the base further having one or more (a pair of) lid clamp tabs protruding from an outside wall of the base, with the bottom edge of each lid clamp tab being equidistant from the top outer wall of the base, as in fig. 2 and col. 3.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger by adding the embodiment taught by Sklar et al, in order to provide a releasable assembly/means for attaching the base with the funnel which is easy to use and simple to manufacture, at the same time, providing a quick disassembly of the base from the funnel thereby allowing the removal and replacement of a filter means disposed in the funnel well of the base, see cols. 1 – 2 of Sklar et al.

26. Regarding claims 10 and 30, first of all, the claims include the limitation of “the bottom edge of each lid clamp tab of the funnel being equidistant from the top wall of the funnel”. This limitation is narrower and implies more than one lid clamp tabs on the funnel,

however, the claims also include the broader limitation of “ the funnel contains (i.e. having) one or more lid clamp tabs on the funnel (see first 3 lines of the claims) [The broader limitation includes at least one lid clamp tab formed on the funnel]. Are claims limiting the number to at least two since, the above mentioned limitation in quotation requires at least two lid clamp tabs to be equidistant from the top wall of the funnel. Krueger, as modified by Sklar et al., has disclosed the limitations of claims 9 and 29, respectively above. Krueger further disclose the funnel (5) having at least one lid clamp tab (9, lip formed circumferentially around the top wall of the funnel) protruding from the outside wall of the funnel (5) with the bottom edge (all around) thereof being equidistant from the top wall of the funnel, as in fig. 1. Although Krueger does not disclose more than one lid clamp tabs, it is considered obvious to one of ordinary skill in the art to modify the at least one circumferential (annular) lid clamp tab formed around the top wall of the funnel to be formed as multiple ring sectors or ring segments thereof, instead of one whole annular band, as an alternative design choice and provide multiple locking points therearound, thereby ensuring proper closing of the lid.

Although Krueger as modified by Sklar et al., fails to teach the outside diameter of the lid clamp tabs of the funnel being equal to the outside diameter of the lid clamp tabs of the base, it is considered an obvious design choice of the manufacturer of the apparatus to form the lid clamp tabs of the base and the funnel to have equal outside diameters in order to be able to use the same size lids or covers for the funnel and the base, thereby eliminating costs of manufacturing different sized lids or covers for each of the funnel and the base.

27. Claims 15 - 16 and 37 - 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger and Jones, Jr. et al., as applied in claim 36 above, and further in view of Sklar et al. (US 5,308,483).

28. Concerning claims 15 and 37, Krueger, as modified by Jones, Jr. et al., has disclosed the limitations of claims 1 and 22, respectively above. Krueger, as modified by Jones, Jr. et al., fails to disclose the base having (contains) one or more lid clamp tabs protruding from an outside wall of the base, with the bottom edge of each lid clamp tab being equidistant from the top outer wall of the base.

29. Sklar et al. teach a vacuum filtration apparatus similar to that of Krueger, having a funnel (10) removably attached to a base with a funnel well (30) and the base further having one or more (a pair of) lid clamp tabs protruding from an outside wall of the base, with the bottom edge of each lid clamp tab being equidistant from the top outer wall of the base, as in fig. 2 and col. 3.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger, as modified by Jones, Jr. et al., by adding the embodiment taught by Sklar et al, in order to provide a releasable assembly/means for attaching the base with the funnel which is easy to use and simple to manufacture, at the same time, providing a quick disassembly of the base from the funnel thereby allowing the removal and replacement of a filter means disposed in the funnel well of the base, see cols. 1 - 2 of Sklar et al.

30. Concerning claims 16 and 38, first of all, the claims include the limitation of “the bottom edge of each lid clamp tab of the funnel being equidistant from the top wall of the funnel”. This limitation is narrower and implies more than one lid clamp tabs on the funnel, however, the claims also includes the broader limitation of “ the funnel contains (i.e. having) one or more lid clamp tabs on the funnel (see first 3 lines of the claims) [The broader limitation includes at least one lid clamp tab formed on the funnel]. Are claims limiting the number to at least two since, the above mentioned limitation in quotation requires at least two lid clamp tabs to be equidistant from the top wall of the funnel. Krueger, as modified by Jones, Jr. et al. and Sklar et al., has disclosed the limitations of claims 15 and 30, respectively above. Krueger further disclose the funnel (5) having at least one lid clamp tab (9, lip formed circumferentially around the top wall of the funnel) protruding from the outside wall of the funnel (5) with the bottom edge (all around) thereof being equidistant from the top wall of the funnel, as in fig. 1. Although Krueger does not disclose more than one lid clamp tabs, it is considered obvious to one of ordinary skill in the art to modify the at least one circumferential (annular) lid clamp tab formed around the top wall of the funnel to be formed as multiple ring sectors or ring segments thereof, instead of one whole annular band, as an alternative design choice and provide multiple locking points therearound, thereby ensuring proper closing of the lid. Although Krueger as modified by Jones, Jr. et al. and Sklar et al., fails to teach the outside diameter of the lid clamp tabs of the funnel being equal to the outside diameter of the lid clamp tabs of the base, it is considered an obvious design choice of the manufacturer of the apparatus to form the lid clamp

tabs of the base and the funnel to have equal outside diameters in order to be able to use the same size lids or covers for the funnel and the base, thereby eliminating costs of manufacturing different sized lids or covers for each of the funnel and the base.

31. Claims 11 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger and Sklar et al., as applied in claims 10 and 30 above, and further in view of Simpson (US 2,039,037).

32. With respect to claims 11 and 31, Krueger, as modified by Sklar et al., has disclosed the limitations of claims 15 and 30, respectively above. Krueger further disclose the apparatus comprising (containing) a lid (11 or 57, see figs. 1 & 4), the lid (11) having an outer wall with an inner surface which has a height equal to the distance between the bottom edge of the lid clamp tab (9) and the top wall of the funnel (5), as in fig. 1. Krueger, as modified by Sklar et al., fail to teach the lid having an outer wall being segmented by a plurality of slots which create a gap in a bottom surface of the outer wall and the height of the slots being less than the height of an inner surface of the outer wall of the lid and the height of the inner surface being equal to or greater than the distance between the bottom edge of each lid clamp tab of the base and the top wall of the base and the inner surface having a diameter less than the outside diameter of the lid clamp tabs of the base, and the slots allow the outer wall of the lid to flex.

33. Simpson teaches a lid having an outer wall (5) segmented by a plurality of slots (6) which create a gap in a bottom surface of the outer wall and the height of the slots being less than the height of an inner surface of the outer wall of the lid and the slots (6) allow the outer wall of the lid to flex, as in figs. 1 – 3 and page 1 of the specification.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the lid of Krueger, as modified by Sklar et al, by adding the embodiment taught by Simpson, in order to provide an improved lid for the vacuum filtration apparatus which not only ensures proper locking position to keep the contents of the funnel within and prevent contamination from the outside, but at the same time, possess a certain amount of resiliency/flexibility to snap the lid onto the funnel's open top end quickly, see col. 2, lines 3 – 40 of the specification page 1.

34. Although Krueger, as modified by Sklar et al. and Simpson, do not teach the height of the inner surface of the outer wall of the lid being equal to or greater than the distance between the bottom edge of each lid clamp tab of the base and the top wall of the base and the inner surface having a diameter less than the outside diameter of the lid clamp tabs of the base, it is considered obvious to one of ordinary skill in the art to modify the height of the inner surface of the outer wall of the lid in order to have the claimed height if the lid is going to be used to cover/close off the funnel well of the base which contain/has the lid clamp tabs to engage thereto. The lid clamp tabs of the base as mentioned above is used to lock the lid in place or fixed position with respect to the container (i.e. funnel or the funnel well of the base) it is

covering, and therefore the size/dimensions of the lid would have to be adapted in order to ensure proper engagement with the lid clamp tabs of the base.

34. Claims 17 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger, Jones, Jr. et al. and Sklar et al., as applied in claims 16 and 38 above, and further in view of Simpson (037).

35. With respect to claims 17 and 39, Krueger, as modified by Jones, Jr. et al. and Sklar et al., has disclosed the limitations of claims 16 and 38, respectively above. Krueger further disclose the apparatus comprising (containing) a lid (11 or 57, see figs. 1 & 4), the lid (11) having an outer wall with an inner surface which has a height equal to the distance between the bottom edge of the lid clamp tab (9) and the top wall of the funnel (5), as in fig. 1. Krueger, as modified by Jones, Jr. et al. and Sklar et al., fails to teach the lid having an outer wall being segmented by a plurality of slots which create a gap in a bottom surface of the outer wall and the height of the slots being less than the height of an inner surface of the outer wall of the lid and the height of the inner surface being equal to or greater than the distance between the bottom edge of each lid clamp tab of the base and the top wall of the base and the inner surface having a diameter less than the outside diameter of the lid clamp tabs of the base, and the slots allow the outer wall of the lid to flex.

36. Simpson teaches a lid having an outer wall (5) segmented by a plurality of slots (6) which create a gap in a bottom surface of the outer wall and the height of the slots being less than the height of an inner surface of the outer wall of the lid and the slots (6) allow the outer wall of the lid to flex, as in figs. 1 – 3 and page 1 of the specification.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the lid of Krueger, as modified by Jones, Jr. and Sklar et al, by adding the embodiment taught by Simpson, in order to provide an improved lid for the vacuum filtration apparatus which not only ensures proper locking position to keep the contents of the funnel within and prevent contamination from the outside, but at the same time, possess a certain amount of resiliency/flexibility to snap the lid onto the funnel's open top end quickly, see col. 2, lines 3 – 40 of the specification page 1.

37. Although Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, do not teach the height of the inner surface of the outer wall of the lid being equal to or greater than the distance between the bottom edge of each lid clamp tab of the base and the top wall of the base and the inner surface having a diameter less than the outside diameter of the lid clamp tabs of the base, it is considered obvious to one of ordinary skill in the art to modify the height of the inner surface of the outer wall of the lid in order to have the claimed height if the lid is going to be used to cover/close off the funnel well of the base which contain/has the lid clamp tabs to engage thereto. The lid clamp tabs of the base as mentioned above is used to lock the lid in place or fixed position with respect to the container (i.e. funnel or the funnel well of the base) it is

covering, and therefore the size/dimensions of the lid would have to be adapted in order to ensure proper engagement with the lid clamp tabs of the base.

38. Claims 32 – 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger, Sklar et al. and Simpson, as applied to claim 31 above, and further in view of Mehra et al. (240).

39. With regards to claims 32 and 33, Krueger, as modified by Sklar et al. and Simpson, has disclosed the limitations of claim 31 above. Krueger, as modified by Sklar et al. and Simpson, fails to disclose a portion of the filter means that is in contact with the filter seal surface, is sealed to the filter seal surface with an ultrasonic seal (claim 33) or a heat seal (claim 32), the seal forming a closed loop.

Mehra et al. teach a vacuum filtration apparatus similar to Krueger, as modified by Sklar et al. and Simpson, having a filter means (56) with a portion thereof in contact with a filter seal surface (in the vicinity of the filter seat 54) and sealed to the seal surface with an ultrasonic seal or heat seal, which forms a closed loop, as in col. 3, lines 18 – 25 and fig. 1.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger, as modified by Sklar et al. and Simpson, by adding the embodiments taught by Mehra et al., in order to provide an improved seal between the filter and the filter support means or funnel well, thereby preventing leakage of unfiltered fluid and unwanted mixture of unfiltered fluid with filtered fluid, as well as provide a means for fixing the

filter in position for preventing bypass and leakage of unfiltered fluid and unwanted mixture of unfiltered fluid with filtered fluid.

40. With respect to claim 34, Krueger, as modified by Sklar et al. and Simpson, has disclosed the limitations of claim 31 above. Claim 34 adds the limitation of using a solvent seal (instead of an ultrasonic seal or heat seal as in claims 32 - 33 above) to seal the filter means to the filter seal surface. Mehra et al. teach using ultrasonic seal or a heat seal for sealing the filter means to a filter seal surface, as in col. 3. Although Krueger as modified by Sklar et al., Simpson and Mehra et al., do not teach using a solvent seal to seal the filter means to the filter seal surface, it is well known in the art that solvent seal/sealing is considered an obvious variation of the type of seal (i.e. ultrasonic or heat seals/sealing) used to seal the filter element as taught by Mehra et al. The use of a solvent seal instead of an ultrasonic seal or heat seal, does not require any energy costs for heating or providing ultrasonic equipment which can be more expensive than providing adhesive solvents.

41. Concerning claim 35, Krueger, as modified by Sklar et al. and Simpson, has disclosed the limitations of claim 31 above. Krueger also discloses the filtration apparatus being disposable, as in col. 1, lines 10 - 11.

42. Claims 18 – 21 and 40 – 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger, Jones, Jr. et al., Sklar et al. and Simpson, as applied to claims 17 and 39, respectively above, and further in view of Mehra et al. (240).

43. With regards to claims 18 - 19 and 40 - 41, Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, has disclosed the limitations of claims 17 and 39, respectively above. Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, fails to disclose a portion of the filter means that is in contact with the filter seal surface, is sealed to the filter seal surface with an ultrasonic seal (claims 19 and 41) or a heat seal (claims 18 and 40), the seal forming a closed loop.

Mehra et al. teach a vacuum filtration apparatus similar to Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, having a filter means (56) with a portion thereof in contact with a filter seal surface (in the vicinity of the filter seat 54) and sealed to the seal surface with an ultrasonic seal or heat seal, which forms a closed loop, as in col. 3, lines 18 – 25 and fig. 1.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, by adding the embodiments taught by Mehra et al., in order to provide an improved seal between the filter and the filter support means or funnel well, thereby preventing leakage of unfiltered fluid and unwanted mixture of unfiltered fluid with filtered fluid, as well as provide a means for fixing the filter in position for preventing bypass and leakage of unfiltered fluid and unwanted mixture of unfiltered fluid with filtered fluid.

44. With respect to claims 20 and 42, Krueger, as modified by Jones, Jr. et al, Sklar et al. and Simpson, has disclosed the limitations of claims 17 and 39, respectively above. Claims 20 and 42 add the limitation of using a solvent seal (instead of an ultrasonic seal or heat seal as in claims 18 - 19 and 40 - 41 above) to seal the filter means to the filter seal surface. Mehra et al. teach using ultrasonic seal or a heat seal for sealing the filter means to a filter seal surface, as in col. 3. Although Krueger as modified by Jones, Jr. et al, Sklar et al., Simpson and Mehra et al., do not teach using a solvent seal to seal the filter means to the filter seal surface, it is well known in the art that solvent seal/sealing is considered an obvious variation of the type of seal (i.e. ultrasonic or heat seals/sealing) used to seal the filter element as taught by Mehra et al. The use of a solvent seal instead of an ultrasonic seal or heat seal, does not require any energy costs for heating or providing ultrasonic equipment which can be more expensive than providing adhesive solvents.

45. Concerning claims 21 and 43, Krueger, as modified by Jones, Jr. et al, Sklar et al. and Simpson, has disclosed the limitations of claims 17 and 39, respectively above. Krueger also discloses the filtration apparatus being disposable, as in col. 1, lines 10 – 11.

46. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger in view of Jones, Jr. et al., Sklar et al. and Simpson.

47. With respect to claim 44, first of all, the claim includes the limitation of “the bottom edge of each lid clamp tab of the funnel being equidistant from the top wall of the funnel”. This limitation is narrower and implies more than one lid clamp tabs on the funnel, however, the claim also includes the broader limitation of “ the funnel contains (i.e. having) one or more lid clamp tabs on the funnel (see first 3 lines of the claims) [The broader limitation includes at least one lid clamp tab formed on the funnel]. Is the claim limiting the number to at least two since, the above mentioned limitation in quotation requires at least two lid clamp tabs to be equidistant from the top wall of the funnel. Krueger discloses a vacuum filtration apparatus comprising:

- a base (72) containing a funnel well (defined by wall 72a and ledge 76 with the horizontal surface/well 63), the funnel well having (with) the following:
 - a filter seal surface (76) disposed adjacent to the bottom of the inside wall of the funnel well,
 - a filter support means (66, 68) disposed in the bottom of the funnel well inside the filter seal surface,
 - an outlet port (64) disposed below said filter support means (66, 68), the outlet port being in fluid flow communication with said filter support means,
- a funnel (56 or 5) with an open top, and a bottom outside portion of the funnel releasably attached to the inside wall (inside surface of wall 72a) of the funnel well, the releasable attachment being an interference fit between the outer wall of the funnel (5) and an inside wall of the funnel well, and the funnel having at least one lid clamp tab (9) protruding

from an outside wall thereof, with the bottom edge of the lid clamp tab being equidistant (all around) from the top wall of the funnel,

- a filter means (29 or 59) disposed in the bottom portion of the funnel well with the downstream surface of the filter means lying in the same plane as the filter seal surface, the filter means releasably sealed between the filter seal surface and the integral flexible seal, and

- a lid having an outer wall with an inner surface with a height of the inner surface being equal to the distance between the bottom edge of the lid clamp tab (9) of the funnel (5) and the top wall of the funnel, as in figs. 1 & 4 – 6 and cols. 1 – 4.

Krueger fails to disclose a top surface of the filter support means being disposed below the filter seal surface to create a pad well below the filter seal surface and an absorbent pad disposed in the pad well with the downstream surface of the pad resting on the top surface of the filter support means and with a portion of the downstream surface of the filter means resting on an upstream surface of the absorbent pad and the base having one or more lid clamp tabs protruding from an outside wall thereof with the bottom edge of each of the lid clamp tabs of the base being equidistant from the top wall of the base, and an outside diameter of the lid clamp tabs of the funnel being equal to the outside diameter of the lid clamp tabs of the base, and the outer wall of the lid being segmented by a plurality of slots which create a gap in a bottom surface of the outer wall and the height of the slots being less than the height of an inner surface of the outer wall of the lid and the height of the inner surface being equal to or greater than the distance between the bottom edge of each lid clamp tab of the base and the top wall of the base and the

inner surface having a diameter less than the outside diameter of the lid clamp tabs of the base, and the slots allow the outer wall of the lid to flex.

48. Jones, Jr. et al. teach a vacuum filtration apparatus similar to that of Krueger, comprising a base (11) and a funnel (10) and a filter support means (40, 48, 42), wherein a top surface (42) of the filter support means disposed below the filter seal surface (48), thereby creating a pad well below the filter seal surface (48), and a lower filter means (in the form of lower filter layer 32) disposed in the bottom of the pad well, an absorbent pad (30) disposed in the pad well above the lower filter means (32), with the downstream surface of the absorbent pad resting on the upstream surface of the lower filter means, with the outer periphery of the lower filter means sealed between the seal surface of the filter support means and the outer periphery of the downstream surface of the absorbent pad, as in figs. 3A, 4A and 8 and cols. 3 – 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger, by adding the embodiments taught by Jones, Jr. et al., in order to provide an improved vacuum filtration apparatus having an improved filter support means and an additional filtering means in the form of an adsorbent pad/disk, thereby providing a more effective filtration apparatus capable not only of removing certain size contaminants/undesirable constituents from a fluid but has an additional adsorbent means for absorbing unwanted constituents not removed by a filter element/membrane layer. Furthermore, the design of the filter support means of Jones, Jr. et al. provides a multitude of various funnels to be combined

with various bases while at the same time provide an active area of the filter element/adsorbent pad be in a direct flow path of the fluid during use, see cols. 3 – 4 of Jones, Jr. et al.

49. Krueger, as modified by Jones, Jr. et al., fails to disclose the base having (contains) one or more lid clamp tabs protruding from an outside wall of the base, with the bottom edge of each lid clamp tab being equidistant from the top outer wall of the base.

Sklar et al. teach a vacuum filtration apparatus similar to that of Krueger, having a funnel (10) removably attached to a base with a funnel well (30) and the base further having one or more (a pair of) lid clamp tabs protruding from an outside wall of the base, with the bottom edge of each lid clamp tab being equidistant from the top outer wall of the base, as in fig. 2 and col. 3.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger, as modified by Jones, Jr. et al., by adding the embodiment taught by Sklar et al, in order to provide a releasable assembly/means for attaching the base with the funnel which is easy to use and simple to manufacture, at the same time, providing a quick disassembly of the base from the funnel thereby allowing the removal and replacement of a filter means disposed in the funnel well of the base, see cols. 1 – 2 of Sklar et al.

50. Krueger, as modified by Jones, Jr. et al. and Sklar et al., fails to teach the lid having an outer wall being segmented by a plurality of slots which create a gap in a bottom surface of the outer wall and the height of the slots being less than the height of an inner surface of the outer wall of the lid and the height of the inner surface being equal to or greater than the distance

between the bottom edge of each lid clamp tab of the base and the top wall of the base and the inner surface having a diameter less than the outside diameter of the lid clamp tabs of the base, and the slots allow the outer wall of the lid to flex.

Simpson teaches a lid having an outer wall (5) segmented by a plurality of slots (6) which create a gap in a bottom surface of the outer wall and the height of the slots being less than the height of an inner surface of the outer wall of the lid and the slots (6) allow the outer wall of the lid to flex, as in figs. 1 – 3 and page 1 of the specification.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the lid of Krueger, as modified by Jones, Jr. et al. and Sklar et al, by adding the embodiment taught by Simpson, in order to provide an improved lid for the vacuum filtration apparatus which not only ensures proper locking position to keep the contents of the funnel within and prevent contamination from the outside, but at the same time, possess a certain amount of resiliency/flexibility to snap the lid onto the funnel's open top end quickly, see col. 2, lines 3 – 40 of the specification page 1.

51. Although Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, do not teach the height of the inner surface of the outer wall of the lid being equal to or greater than the distance between the bottom edge of each lid clamp tab of the base and the top wall of the base and the inner surface having a diameter less than the outside diameter of the lid clamp tabs of the base, it is considered obvious to one of ordinary skill in the art to modify the height of the inner surface of the outer wall of the lid in order to have the claimed height if the lid is going to be

used to cover/close off the funnel well of the base which contain/has the lid clamp tabs to engage thereto. The lid clamp tabs of the base as mentioned above is used to lock the lid in place or fixed position with respect to the container (i.e. funnel or the funnel well of the base) it is covering, and therefore the size/dimensions of the lid would have to be adapted in order to ensure proper engagement with the lid clamp tabs of the base.

52. Claims 45 - 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krueger, Jones, Jr. et al., Sklar et al. and Simpson, as applied to claim 44 above, and further in view of Mehra et al. (240).

53. With regards to claims 45 - 46, Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, has disclosed the limitations of claim 44 above. Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, fails to disclose a portion of the filter means that is in contact with the filter seal surface, is sealed to the filter seal surface with an ultrasonic seal (claim 46) or a heat seal (claim 45), the seal forming a closed loop.

Mehra et al. teach a vacuum filtration apparatus similar to Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, having a filter means (56) with a portion thereof in contact with a filter seal surface (in the vicinity of the filter seat 54) and sealed to the seal surface with an ultrasonic seal or heat seal, which forms a closed loop, as in col. 3, lines 18 – 25 and fig. 1.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Krueger, as modified by Jones, Jr. et al., Sklar et al. and Simpson, by

adding the embodiments taught by Mehra et al., in order to provide an improved seal between the filter and the filter support means or funnel well, thereby preventing leakage of unfiltered fluid and unwanted mixture of unfiltered fluid with filtered fluid, as well as provide a means for fixing the filter in position for preventing bypass and leakage of unfiltered fluid and unwanted mixture of unfiltered fluid with filtered fluid.

54. With respect to claim 47, Krueger, as modified by Jones, Jr. et al, Sklar et al. and Simpson, has disclosed the limitations of claim 44 above. Claim 47 adds the limitation of using a solvent seal (instead of an ultrasonic seal or heat seal as in claims 45 - 46 above) to seal the filter means to the filter seal surface. Mehra et al. teach using ultrasonic seal or a heat seal for sealing the filter means to a filter seal surface, as in col. 3. Although Krueger as modified by Jones, Jr. et al., Sklar et al., Simpson and Mehra et al., do not teach using a solvent seal to seal the filter means to the filter seal surface, it is well known in the art that solvent seal/sealing is considered an obvious variation of the type of seal (i.e. ultrasonic or heat seals/sealing) used to seal the filter element as taught by Mehra et al. The use of a solvent seal instead of an ultrasonic seal or heat seal, does not require any energy costs for heating or providing ultrasonic equipment which can be more expensive than providing adhesive solvents.

55. Concerning claim 48, Krueger, as modified by Jones, Jr. et al, Sklar et al. and Simpson, has disclosed the limitations of claim 44 above. Krueger also discloses the filtration apparatus being disposable, as in col. 1, lines 10 – 11.

Conclusion

56. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 4,678,576 (Leoncavallo), 4,702,834 (Relyea), 5,234,585 (Zuk, Jr.), 235,279 & 235,278 (both to Norton), 5,567,309 (Classon et al.), 5,792,425 (Clark et al.) and 4,468,321 (St. John).

57. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (703) 305-1039. The examiner can normally be reached on Mondays to Fridays from 8:30 A.M. to 4:30 P.M..

58. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

59. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


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